

What is claimed is:

1. A process for separating mixtures of isomeric pentenenitriles, in which at least one isomer is depleted from the mixture, which comprises effecting the separation of the mixtures of isomeric pentenenitriles distillatively under reduced pressure.
2. The process according to claim 1, wherein at least two different isomers are separated.
3. The process according to claim 1 or 2, wherein the mixtures are selected from the group consisting of
  - mixtures comprising 2-methyl-3-butenitrile and 3-pentenenitrile,
  - mixtures comprising 2-methyl-3-butenitrile and (Z)-2-methyl-2-butenitrile,
  - mixtures comprising cis-2-pentenenitrile and 3-pentenenitrile and
  - mixtures comprising (E)-2-methyl-2-butenitrile and 3-pentenenitrile.
4. The process according to any one of claims 1 to 3, wherein the mixture comprises 2-methyl-3-butenitrile and 3-pentenenitrile and stems from a reaction of 1,3-butadiene with hydrogen cyanide over a hydrocyanation catalyst.
5. The process according to claim 4, wherein the proportion of 2-methyl-3-butenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of all pentenenitrile isomers in the mixture, and/or the proportion of 3-pentenenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of the pentenenitrile isomers in the mixture.
6. The process according to any of claims 1 to 3, wherein the mixture comprises 2-methyl-3-butenitrile and (Z)-2-methyl-2-butenitrile and stems from an isomerization of 2-methyl-3-butenitrile.
7. The process according to claim 6, wherein the proportion of 2-methyl-3-butenitrile in the mixture is from 0.1 to 99% by weight, based on the sum of the pentenenitrile isomers in the mixture, and/or the proportion of (Z)-2-methyl-2-butenitrile in the mixture is from 0.1 to 99% by weight, based on the sum of the pentenenitrile isomers in the mixture.

8. The process according to any of claims 1 to 3, wherein the mixture comprises cis-2-pentenenitrile and 3-pentenenitrile and stems from a reaction of 3-pentenenitrile with hydrogen cyanide over a hydrocyanation catalyst.
- 5 9. The process according to claim 8, wherein the proportion of cis-2-pentenenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of pentenenitrile isomers in the mixture, and/or the proportion of 3-pentenenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of the pentenenitrile isomers in the mixture.
- 10 10. The process according to any of claims 1 to 3, wherein the mixture comprises (E)-2-methyl-2-butenitrile and 3-pentenenitrile and stems from a reaction of 1,3-butadiene with hydrogen cyanide over a hydrocyanation catalyst or from the isomerization of 2-methyl-3-butenitrile or from a reaction of 3-pentenenitrile with hydrogen cyanide over a hydrocyanation catalyst.
- 15 11. The process according to claim 10, wherein the proportion of 3-pentenenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of the pentenenitrile isomers in the mixture, and/or the proportion of (E)-2-methyl-2-butenitrile in the mixture is from 0.1 to 99.9% by weight, based on the sum of the pentenenitrile isomers in the mixture.
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